



Ship Material Condition Metrics Model

Maintenance **F**igure **O**f **M**erit (MFOM) 2.0



Mr. Dale Hirschman
MFOM PM, FFC N434

4 April 2007

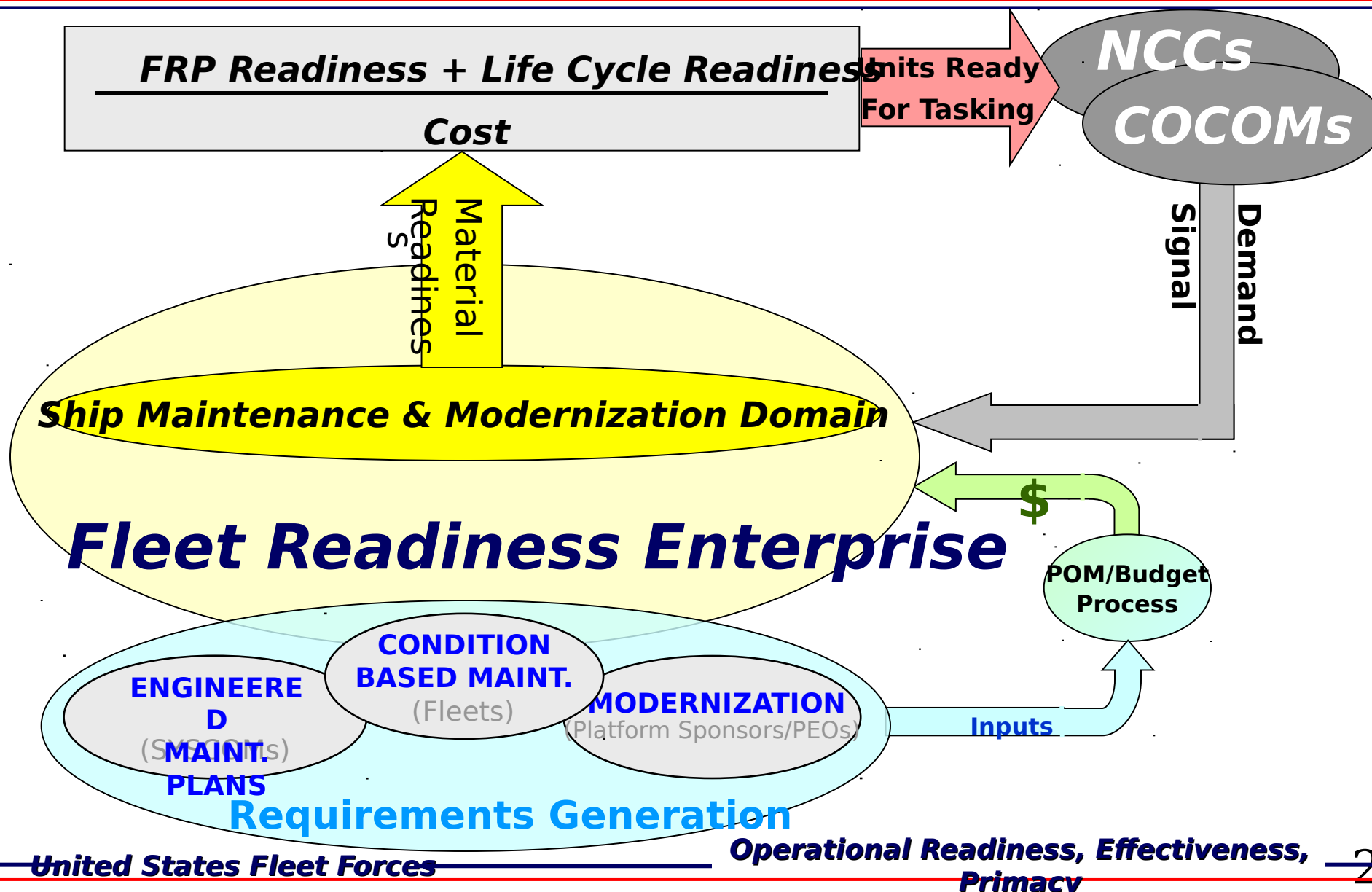
United States Fleet Forces

***Operational Readiness, Effectiveness,
Primacy***

OSD Brief
1



Today's Maintenance Strategy





How does MFOM Help

MFOM 2.0 Provides 3 Significant Tools

- **Material Readiness Reporting Tool for Ship Systems**
 - MFOM calculates and reports a percentage of readiness for shipboard equipment and systems based on the documented material condition
 - MFOM uses standard material reporting tools
- **Screening Value for Maintenance Actions**
 - MFOM provides each maintenance action a numerical value based on the Equipment Operating Capability (EOC) and system impact
 - This allows for the prioritization of maintenance actions based on their contribution to material readiness
- **Material Readiness - Resources Tool**
 - MFOM identifies the funding required to reach a certain level of material readiness based on the documented material condition



Basics of MFOM

- **MFOM 2.0 is a computer based tool built on a hierarchical structure that calculates against operational requirements**
- **Designed to consistently and objectively calculate a material condition readiness value for equipment, systems, tasks, missions or the ship.**
 - **MFOM resides on the classified and unclassified networks both ashore and afloat**
 - **MFOM is accessed through any internet connection**
 - **MFOM is modeled based on input from operational and technical Subject Matter Experts**
 - **MFOM takes into account redundancy and system interdependency**

**Near real time reporting of ship's material
condition to support maintenance
planning
and operational readiness reporting
(supports DRRS-N)**



MFOM Roadmap

MFOM provides the Navy Maintenance community with a single, authoritative, centrally managed application that provides the necessary data upgrades and improvements to support readiness and maintenance reporting.

- MFOM is designed for easy incorporation into ERP.
- MFOM is the ship readiness feed for DRRS-N (equipment pillar)
 - MFOM will address readiness appropriate to the FRTP
- MFOM will be the primary waterfront maintenance tool for budgeting, organizing and planning (O, I & D level)
 - MFOM will associate detailed funding with appropriate maintenance actions
 - MFOM will improve the interaction between established maintenance tools to leverage necessary capabilities and functionalities.
 - MFOM will provide validation, screening and brokering (VSB) capability for building the maintenance work packages based on metrics.



MFOM Data Inputs

- ❑ **MFOM takes input from existing documentation**
 - **Automated Work Requests (i.e., 2 Kilos)**
 - **Inspections, Certifications, Assessments and Visits (ICAVs)**
 - **Alterations**
 - **Repair work**
 - **CASREPs, etc**
 - **Tag-outs (eSOMS)**
 - **Machinery Monitoring Systems (e.g., ICAS)**
 - **IPARS**
 - **Class Maintenance Plans**
 - **Other Technical Documentation (DFS, UROs, IMMPS, Master Spec Catalog, MRCs)**
- ❑ **MFOM starts with existing ship's configuration data**
 - **All records for each hull from CDMD-OA**



What's being Constructed

Classified
Unclassified

Inputs:

Interfaced Apps:

PMS SKED
eSOMS
eDFS
AWN (ETC)
R-SUPPLY
R-ADMIN
RAMIS
OMMS-NG
RMMCO

CASREPS

Interfaced Data:

Degradation
Curves
ICMP/CMP
CSMP
Cost data
EOC
WEBSKED
ICAS/IPARS

ALTS

MFOM

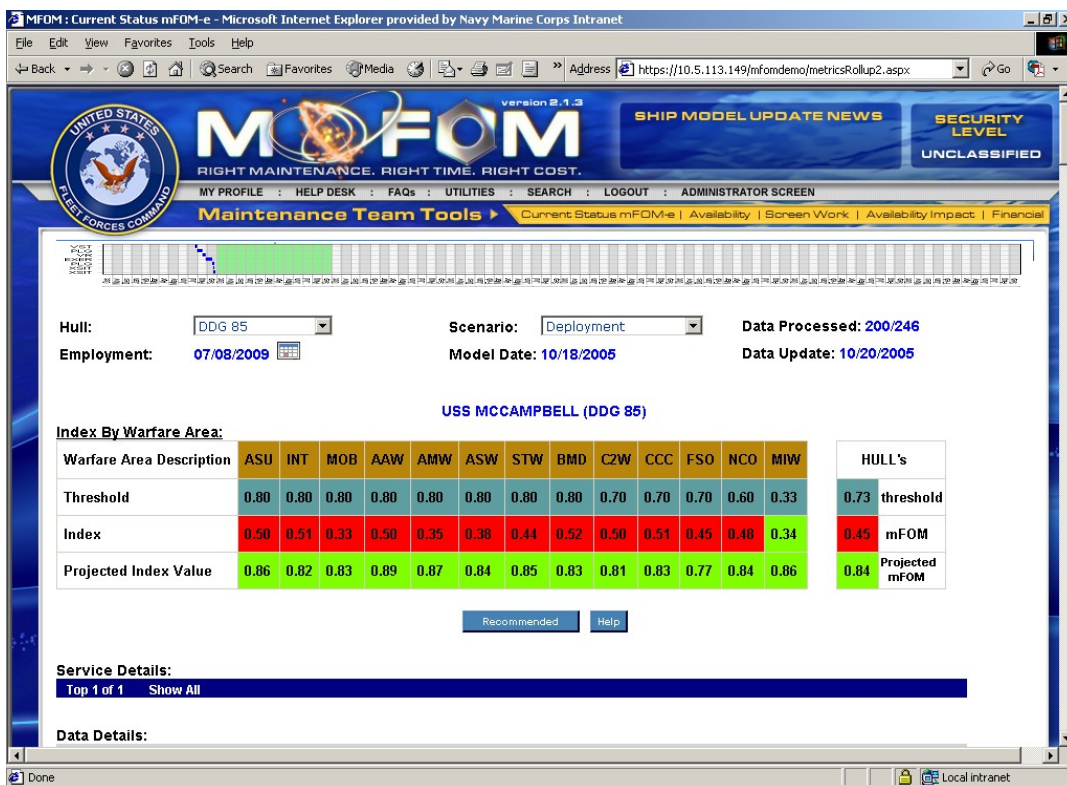
Models
Core Software
Equations
WT/Impacts
FIN
Scenario
NTAs
Screen/Broker
Afloat Portal

Outputs:

Ship Readiness
Class Readiness
Equip/System
Readiness
FRP Cost
Life Cycle Cost
Total Cost
Screening Value
Recommended
Repairs
Assessment Results
Predictive:
Readiness
Budget



Ship's Material Condition Readiness

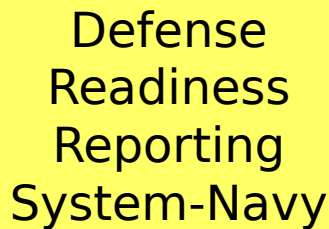


Data Details:

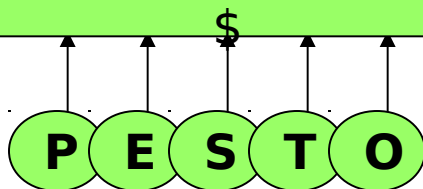
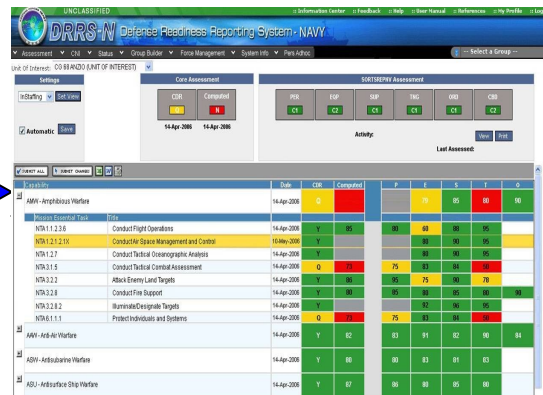
ASU	INT	MOB	AAW	AMW	ASW	STW	BMD	C2W	CCC	FSO	NCO	MIW
WAR	LINKED/ LIKE WORK	EFFECT	W/C JSN	EOC	NARRATIVE	AVAIL	REPAIR ACTIVITY	REC	mFOM-e	Inc	Exc	
ASU	166	0.61	EM020441	0.3		A123	Y	0				
ASU	163	0.66	EM020439	0.0	REMOVE AND REPLACE C SUMP	A123	Y	11.04				
ASU	167	0.78	PE040012	0.6	PROVIDE WAREHOUSE	A123	Y	41.10				
ASU	164	1.0	CF020267	0.0	TAO VDDS MONITOR FAILURE		N	52.58				
ASU	165	0.67	CM020226	0.0	BAD MO DRIVE		Y	61.19				
ASU	130	0.89	EM020393	0.8	CORRODED DRIP PAN		Y	75.90				
ASU	62	0.92	EM020426	0.8	HOPM FLOW METERS OUT OF CAL		Y	79.24				
ASU	20	0.80	CG030076	0.0	NIGHT VISION HAS BROKEN KNOB		Y	81.13				
ASU	119	0.91	OT020072	0.8	MOVE DCC CUT-OUT SWITCH		Y	82.25				
ASU	42	0.87	CM020187	0.0	BAD POWER SUPPLY IN MCP		Y	84.47				
ASU	42	0.87	CM020207	0.6	FUSES		Y	84.47				
ASU	43	0.87	CM020195	0.0	DAMAGED DELUGE HOSE		Y	84.47				
ASU	43	0.87	CM020196	0.0	DAMAGED DELUGE HOSE		Y	84.47				
ASU	43	0.87	CM020197	0.0	DAMAGED DELUGE HOSE		Y	84.47				
ASU	44	0.87	CM020188	0.0	BAD POWER SUPPLY IN MCP		Y	84.47				
ASU	71	0.87	CM020234	0.0	TRANSFORMERS		Y	84.47				
ASU	135	0.87	CM020222	0.0	DAMAGED W29 CABLE ASSEMBLY		Y	84.47				
ASU	135	0.87	CM020192	0.6	DAMAGED DELUGE HOSE		Y	84.47				
ASU	141	0.87	CM020228	0.0	DAMAGED T3 AND T4 ON A3		Y	84.47				
ASU	144	0.87	CM020233	0.0	TRANSFORMERS		Y	84.47				
ASU	139	0.97	CM020224	0.8	IMA PERFORM 7211 R-26		N	84.47				
ASU	140	0.97	CM020227	0.8	IMA PERFORM 7211 R-26		N	84.47				
ASU	121	0.93	EM010350	0.6	PUMP CALIBRATION REQUIRED	B123	Y	85.54				
ASU	124	0.93	EM010352	0.8	POST DEPLOYMENT INSPECTION	B123	Y	85.54				
ASU	123	0.94	EM010351	0.6	CALIBRATION REQUIRED FOR GAGES	B123	N	86.51				
ASU	126	0.96	EM040181	0.0	STRIPPED VALVE STEM	B123	N	89.47				
ASU	1	0.94	CI020324	0.0		B123	N	89.66				
ASU	1	0.94	CI020325	0.0	NO COMMS ON SIWCS RADIO	B123	N	89.66				
ASU	1	0.94	CSE10006	0.0	NO COMMS ON SIWCS RADIO	B123	N	89.66				
ASU	1	0.94	CI020322	0.0	NO COMMS ON SIWCS RADIO	B123	N	89.66				
ASU	1	0.94	CSE10007	0.0	LOSS OF COMMS ON SIWCS RADIO	B123	N	89.66				
ASU	1	0.94	CSE10008	0.0	NO COMMS ON SIWCS RADIO	B123	N	89.66				
ASU	1	0.94	CI020323	0.0	NO COMMS ON SIWCS RADIOS	B123	N	89.66				
ASU	1	0.94	CSE10009	0.0	NO COMMS ON SIWCS RADIO	B123	N	89.66				
ASU	1	0.94	CSE10010	0.0	NO COMMS ON SIWCS RADIO	B123	N	89.66				
ASU	90	0.90	EM010349	0.0	FAULTY DISCRET OUTPUT CARD		Y	90.53				
ASU	138	0.95	CSE10030	0.0	FAULTY SYNTHESIZER ON RCVR 2		N	90.80				
ASU	6	0.99	OI01R012	0.0	MISSING RED LIGHT AND PLACARD		N	91.47				
ASU	125	0.97	EM010354	0.8	CORROSION CONTROL REQUIRED		N	91.99				
ASU	45	0.97	EM020394	0.8	CORROSION CONTROL DOOR 2-262-2		N	92.04				
ASU	132	0.93	CF020268	0.0	XSTAB 10 POWER FAILURE		N	92.24				
ASU	74	0.96	CSE10004	0.0	BIT TEST FAILURE ON USC-55		N	92.34				

New Readiness Values indicated after repairs are made

Software indicates which items should be repaired to support the next mission



DRRS Screen

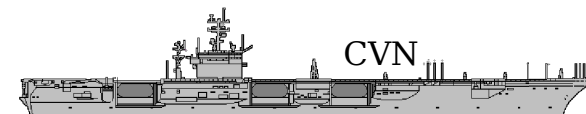
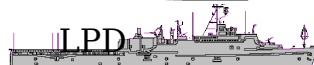


NTAs

- Track air targets
- Move units

MFOM

MRAS





Readiness Drill Down

UNCLASSIFIED

Information Center

Feedback

Help

User Manual

References

My Profile

Logout

DRRS-N

Defense Readiness Reporting System - NAVY

Assessment

CNI

Status

Group Builder

Force Management

System Info

Pers Adhoc

Unit Of Interest: CG 68 ANZIO (UNIT OF INTEREST)

Settings

InStaffing

Set View

Automatic

Save

Core Assessment

CDR

Computed

14-Apr-2006

14-Apr-2006

SORTSREP Assessment

PER

EQP

SUP

TNG

ORD

CBO

C1

C2

C1

C1

C1

C2

Activity:

View

Print

Last Assessed:

SUBMIT ALL

SUBMIT CHANGES

Capability	Date	CDR	Computed	P	E	S	T	O
AMW - Amphibious Warfare	14-Apr-2006	Q			79	85	80	90
Mission Essential Task	Title							
NTA 1.1.2.3.6	Conduct Flight Operations	14-Apr-2006	Y	85	80	60	88	95
NTA 1.2.1.2.1X	Conduct Air Space Management and Control	10-May-2006	Y		80	90	95	
NTA 1.2.7	Conduct Tactical Oceanographic Analysis	14-Apr-2006	Y		80	90	95	
NTA 3.1.5	Conduct Tactical Combat Assessment	14-Apr-2006	Q	73	75	83	84	50
NTA 3.2.2	Attack Enemy Land Targets	14-Apr-2006	Y	86	95	75	90	78
NTA 3.2.8	Conduct Fire Support	14-Apr-2006	Y	80	85	80	85	80
NTA 3.2.8.2	Illuminate/Designate Targets	14-Apr-2006	Y		92	96	95	
NTA 6.1.1.1	Protect Individuals and Systems	14-Apr-2006	Q	73	75	83	84	50
AAW - Anti-Air Warfare	14-Apr-2006	Y	82	83	91	82	90	84
ASW - Antisubmarine Warfare	14-Apr-2006	Y	80	8	83	81	83	
ASU - Antisurface Ship Warfare	14-Apr-2006	Y	87	8	80	85	80	

Drill Down Capability

- Clicking on Equipment Pillar bubble brings up top five degraded systems degrading this capability on a ship
- System Name, JSN, ETR, CSMP Summary are displayed

System Name Summary	JSN	ETR	CSMP
Chill Water Sys leaks	EM02-2231	3/09/06	# 2 CWP Seal
Anchor Windlass oil	EA01-1347	1/15/06	Debris in lube oil



SHIP MODEL UPDATE NEWS

SECURITY
LEVEL
UNCLASSIFIED

MY PROFILE : HELP DESK : FAQs : UTILITIES : SEARCH : LOGOUT : ADMINISTRATOR SCREEN

3/29/2007

Maintenance Team Tools ▶

Current Status MFOM-s | Availability | Screen Work | Availability Impact | Financial

BUSINESS SENSITIVE

MT Financial



Hull: DDG 85

Availability: 11

Scenario: Deployment

Employment: 03/04/2002

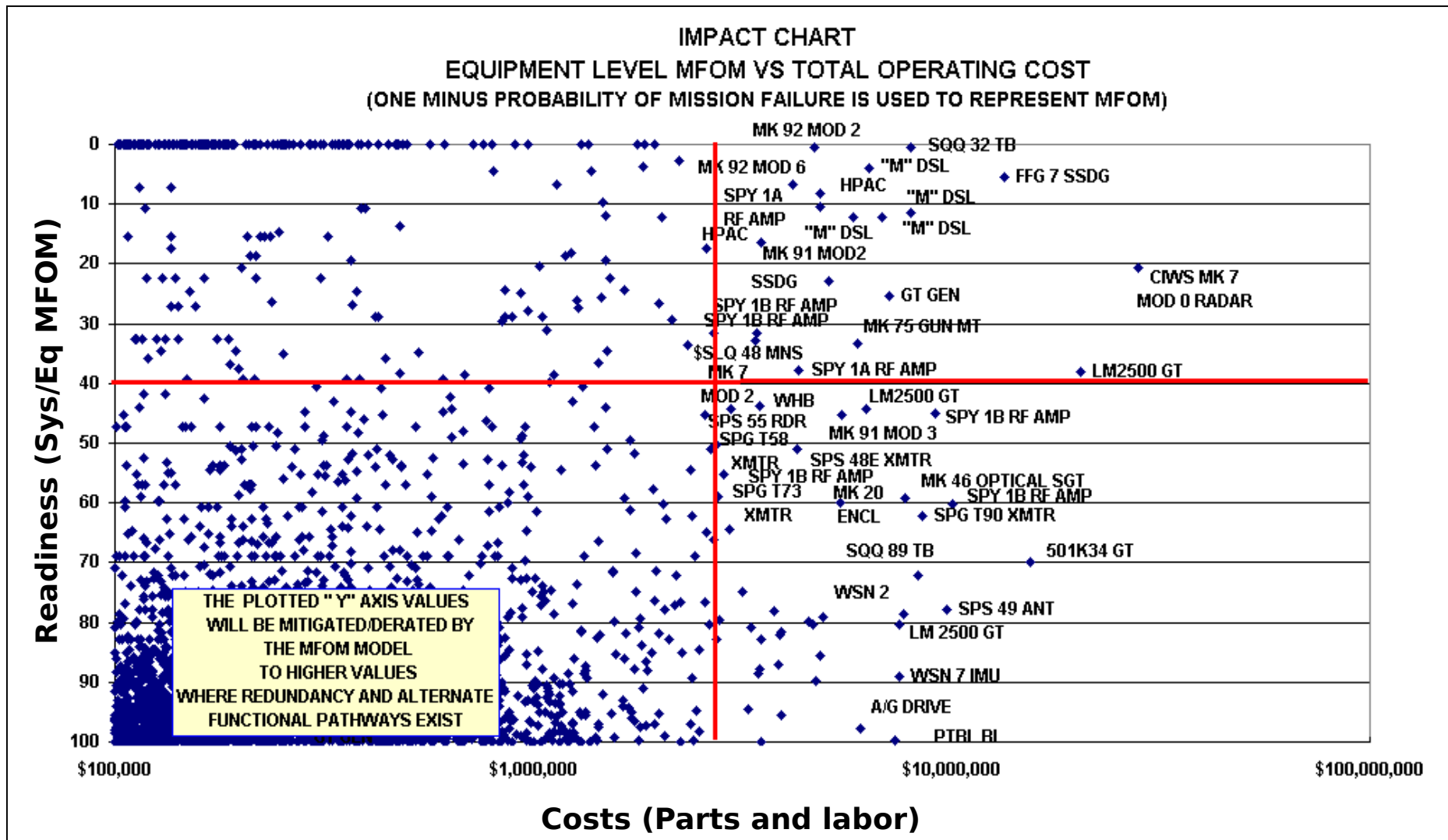
Model Date: 10/18/2005

Data Update: 03/13/2007

ESWBS	JOB	LINKED/ LIKE WORK	NARRATIVE	INDEX	AVAIL	REPAIR ACTMITY	mFOM	MD's	Total Budget Remaining	GFM Budget Remaining	NAVSEA Budget Remaining
									\$105,000.00	\$80,000.00	\$25,000.00
23311	EM011964	18	JW PUMP PRESS. LOW	0	A6A4	Activity 3	97.07	5	\$104,950.00		\$24,950.00
2331	EM011890	18	DEI DUE	0.8	A6A4	Activity 3	97.07	10	\$104,850.00		\$24,850.00
23311	EM011941	18	L/O LINE HAS SMALL HOLE	0.8	A6A4	Activity 3	97.07	5	\$104,800.00		\$24,800.00
23311	EM011943	18	CORE LEAKS	0.8	A6A4	Activity 3	97.07	5	\$104,750.00		\$24,750.00
23311	EM011978	18	O-RING WORN	0.8	A6A4	Activity 3	97.07	19	\$104,560.00		\$24,560.00
44151	OE011030	23	BAD K2 KEYLINE RELAY	0	A6A4	Activity 5	40	10	\$104,360.00		\$24,360.00
44151	OE011033	23	FAULTY TRANSMITTER MODULE	0	A6A4	Activity 4	40	5	\$104,260.00	\$79,900.00	
58311	DA01R005	25	TENSION SPRING CORRODED	1	A6A4	Activity 3	12.93	5	\$104,210.00		\$24,310.00
58311	DA01R006	25	DAVIT PAINT DETERIORATING	1	A6A4	Activity 3	12.93	5	\$104,160.00		\$24,260.00
58300	DA01R008	25	MISSING TAKE UP MARKS	1	A6A4	Activity 4	12.93	5	\$104,060.00	\$79,800.00	

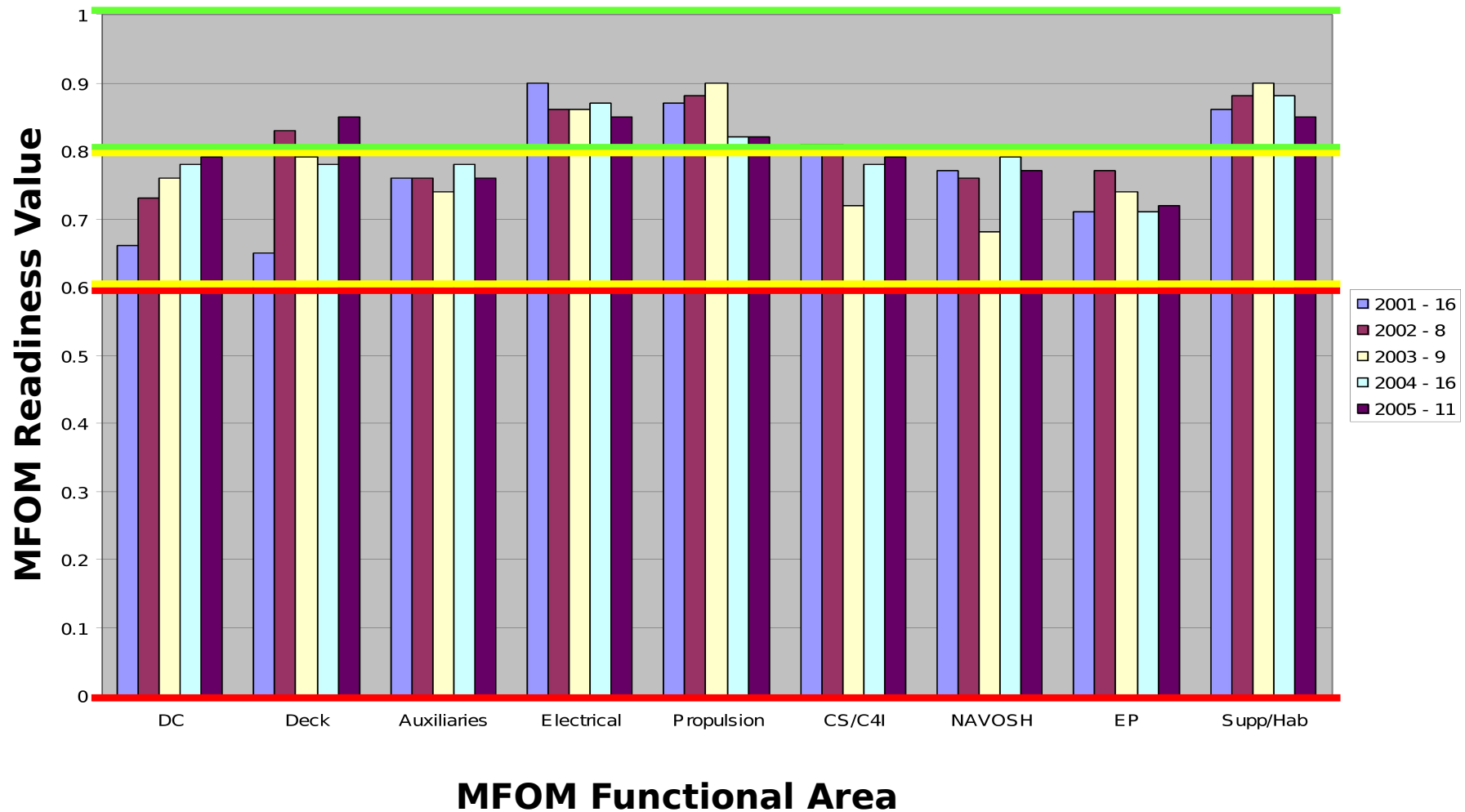


TMA/TMI Data Analysis



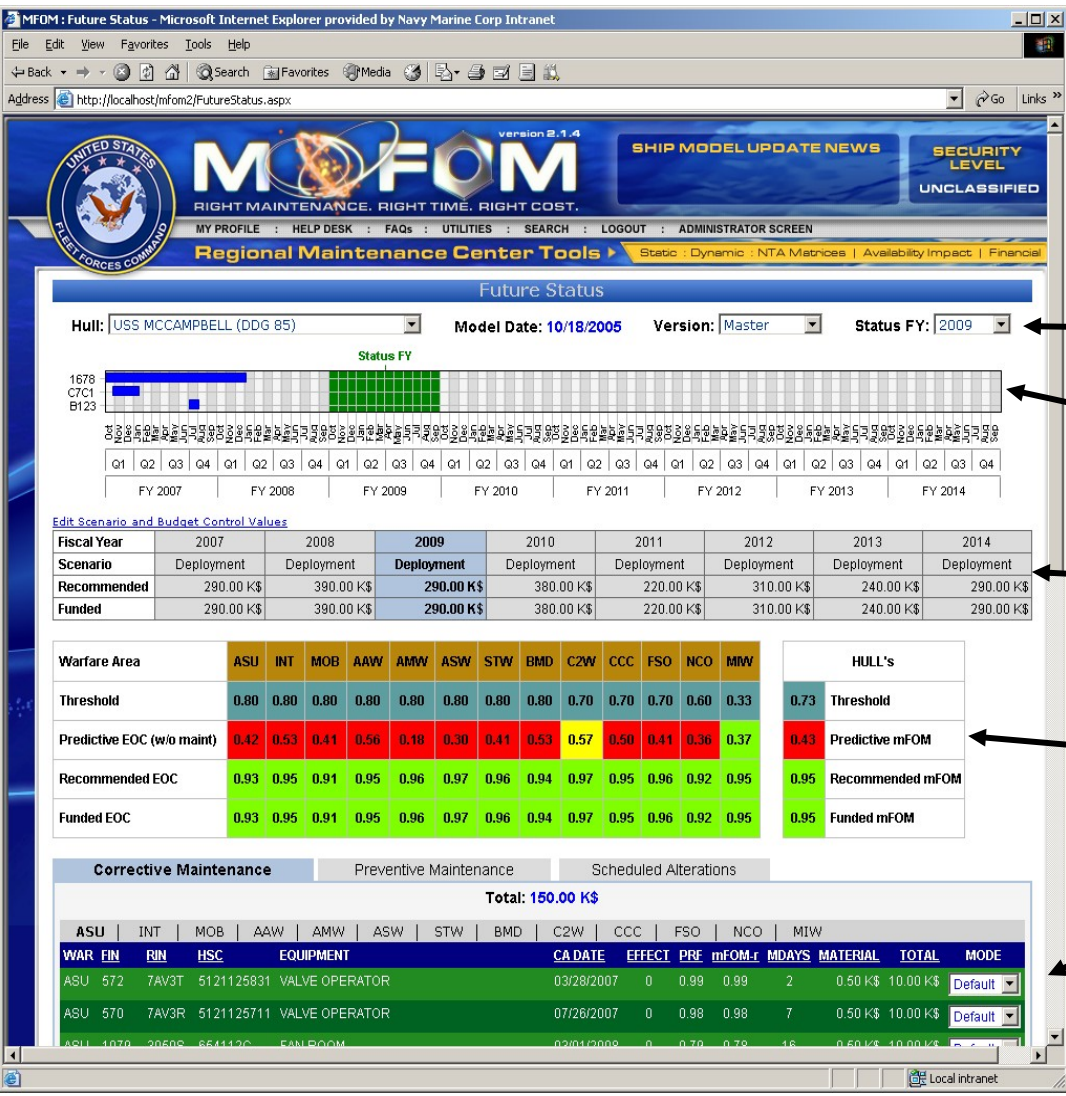


INSURV MI TRENDS





Predictive MFOM



- **Future Status Screen**
 - The “main” screen for MFOM Predictive
 - Five Sections
 - Ship/Version/Year selection
 - Availability Schedule
 - Budget Requirements & Controls
 - MFOM Table
 - Work List



Maintenance Planning in Predictive MFOM

Corrective Maintenance				Preventive Maintenance				Scheduled Alterations								
Total: 14.00 K\$																
ASU	INT	MOB	AAW	AMW	ASW	STW	BMD	C2W	CCC	FSO	NCO	MIW				
WAR	FIN	RIN	HSC	EQUIPMENT				CADATE	EFFECT	PRE	MFOM	L	MDAYS	MATERIAL	TOTAL	
ASU	570	7AV3R	5121125711	VALVE OPERATOR				11/12/2009	0	0.93	0.93	7	0.50 K\$	1.75 K\$		
ASU	572	7AV3T	5121125831	VALVE OPERATOR				02/10/2010	0	0.88	0.88	2	0.50 K\$	1.25 K\$		
ASU	1079	3050S	654112C	FAN ROOM				06/28/2012	0	0.82	0.81	16	0.50 K\$	1.50 K\$		
ASU	772	7AWTD	5121223A1	FAN COIL ASSEMBLY 3-317-2				11/26/2012	0	0.73	0.73	40	0.50 K\$	1.25 K\$		
ASU	10	7EZMW	514112562	VALVE ASSEMBLY, ISOLATION, BRANCH RETURN				07/13/2015	0.18	0.94	0.76	46	0.50 K\$	1.25 K\$		
ASU	10	7EZMW	514112562	VALVE ASSEMBLY, ISOLATION, BRANCH RETURN				05/15/2055	0.18	0.94	0.76	27	0.50 K\$	1.25 K\$		
ASU	10	7EZMW	514112562	VALVE ASSEMBLY, ISOLATION, BRANCH RETURN				07/13/2015	0.18	0.94	0.76	46	0.50 K\$	1.25 K\$		
ASU	10	7EZMW	514112562	VALVE ASSEMBLY, ISOLATION, BRANCH RETURN				05/15/2055	0.18	0.94	0.76	27	0.50 K\$	1.25 K\$		
ASU	9	7EZDH	514113692	VALVE ASSEMBLY, ISOLATION, BRANCH RETURN				07/09/2010	0.18	0.89	0.73	44	0.50 K\$	1.75 K\$		
ASU	2	7AH4V	5141125A1	VALVE, ISOLATION, BRANCH SUPPLY				07/29/2012	0.18	0.80	0.65	22	0.50 K\$	1.50 K\$		
ASU	14735	7E84U	244114	PRPLN SHAFT BEARINGS STERN TUBE BRG				02/14/2009	0.48	0.84	0.43	14	0.50 K\$	1.75 K\$		
ASU	12807	7AC9P	555132DF	VALVE, SOLENOID OPERATED, AFFS SYSTEM				05/31/2010	0.56	0.80	0.35	9	0.50 K\$	1.50 K\$		
ASU	24044			TANK				11/16/2008	0.57	0.90	0.38	23	0.50 K\$	1.75 K\$		
ASU	23925	3057U	66511112	TEST LAB				12/17/2008	0.57	0.88	0.37	36	0.50 K\$	1.75 K\$		
ASU	14864			TANKS				04/20/2008	0.59	0.90	0.36	5	0.50 K\$	1.50 K\$		
ASU	15059	7CQDX	234111	GAS GENERATOR				06/18/2008	0.61	0.87	0.33	33	0.50 K\$	1.75 K\$		
ASU	27666		523011	POTABLE WATER SYSTEM				07/30/2008	0.70	0.73	0.21	30	0.50 K\$	1.25 K\$		
ASU	6139	7EW1L	16711514	DOOR, STRUCTURAL, 1-130-2				07/26/2007	0.72	0.93	0.25	13	0.50 K\$	1.25 K\$		
ASU	27668		523011	POTABLE WATER SYSTEM				11/21/2007	0.72	0.87	0.23	29	0.50 K\$	1.75 K\$		
ASU	8014	7EV2A	1681214H	DOOR, STRUCTURAL, 03-178-1				11/21/2007	0.73	0.87	0.23	12	0.50 K\$	1.50 K\$		
ASU	27655		523011	POTABLE WATER SYSTEM				04/29/2008	0.73	0.79	0.21	25	0.50 K\$	1.50 K\$		
ASU	11038	00BIE	5721216	ELECTRIC TRUCK				05/30/2008	0.74	0.77	0.20	38	0.50 K\$	1.75 K\$		
ASU	1111	7ACFZ	52911B4	VALVE, STOP, HOSE CONNECTION				02/25/2007	0.95	0.90	0.03	42	0.50 K\$	1.50 K\$		

• Predictive MFOM Work List

- Builds future availabilities based on VSB protocols
- Uses degradation curves to predict future failures
- Inputs known Class Maintenance Plan actions and Modernization in out years
- Uses projected Man-day rates

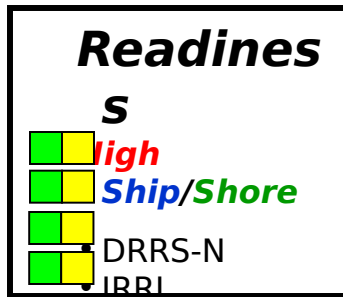
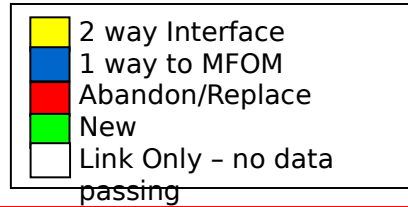
• Outputs

- Indicates predicted MFOM readiness value based on work list
- Links modernization to maintenance actions
- Estimates funding to achieve desired FRP readiness and Life Cycle readiness
- Provides information to port loading model and OPNAV campaign model

Overdue Funded	Recommended Funded	Not Recommended Funded
Overdue Unfunded	Recommended Unfunded	Not Recommended Unfunded



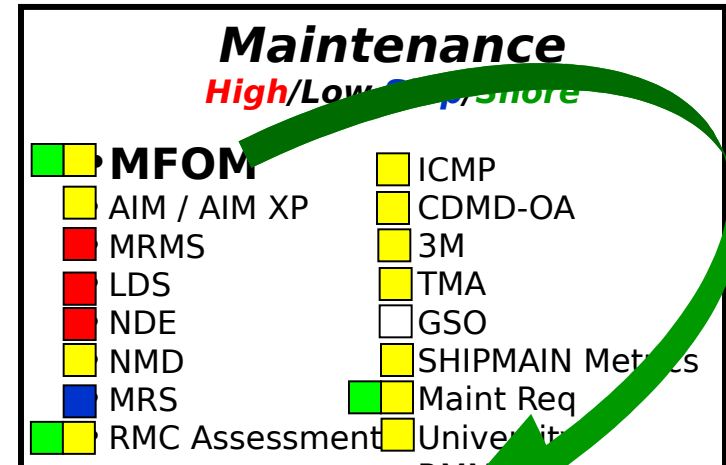
Readiness / Maintenance Interfaces



- IMS
- MFOM



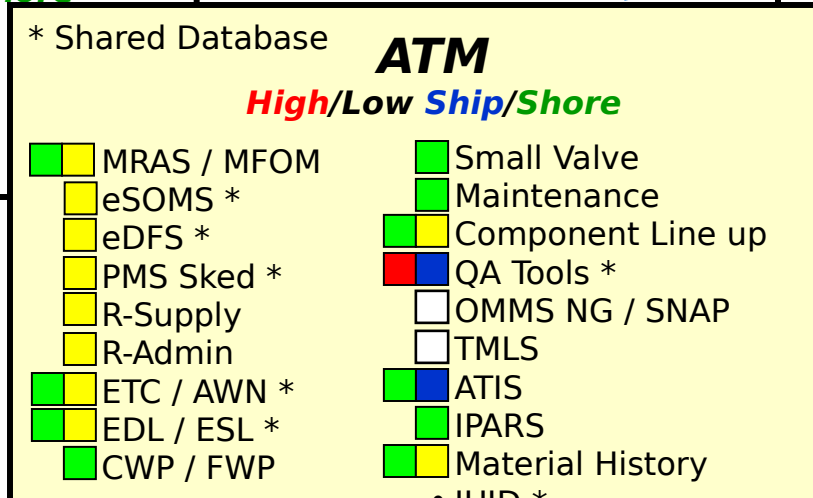
- Anchor Desk



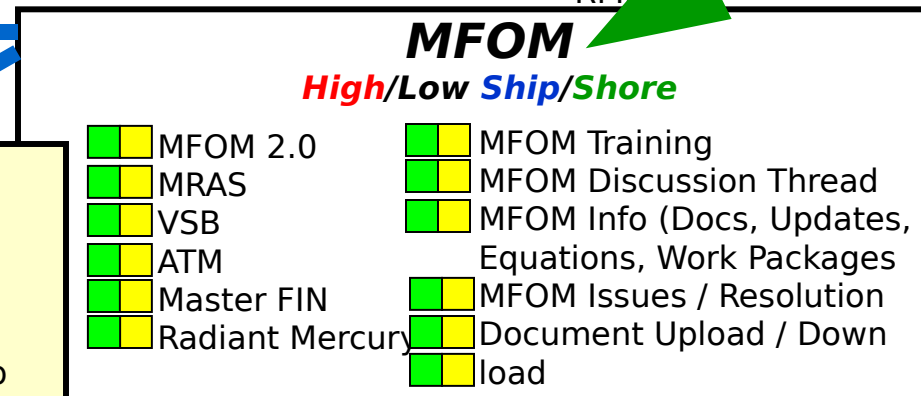
- RMC



- VSB
- RMAIS
- MAMS
- MST
- M&SWP



- IUID *



- Sub 2K Passage



Building the Model

A Coordinated Group Effort

• 38 Government Activities

Fleet Forces Command
NSWCCD-SSES Philadelphia
NSWC Crane
NSWC Port Hueneme
NSWC Corona
NSWC Indian Head
NSWC Dahlgren
NAWC Lakehurst
NSWC Panama City
Carrier Planning Activity
NSLC Crane
NSLC Mechanicsburg
Center for Naval Analysis
COMFISCS

CNSF, CNAF, CSF
NUWC Newport
NSWC Louisville
NAVAIR
NSWC Earle
Port Engineers
PEO Ships, Sub, & Carriers
Norfolk Naval Shipyard
(LHA/LHD)
Puget Sound Naval Shipyard
(MCM)
Boston Detachment
(FFG, LSD, LPD)
Navy ERP

SUBMEPP
SPAWAR San Diego
SPAWAR Charleston
SPAWAR Chesapeake
SUPSHIP Bath
SUPSHIP Newport News
SUPSHIP Pascagoula
NAVSEA
NETWARCOM
AIS Center Norfolk
NAVSUP
OPNAV N81
Office of Naval Research

• 14 Contractors

CDI
MANTECH
CSC
CACI
EG&G

Northrop Grumman Newport News
Northrop Grumman Pascagoula (CG)
Bath Iron Works (DDG)
MI Technical Solutions
UNISYS

Lockheed Martin
Booze Allen Hamilton
Antech Systems
Romulus



FIN

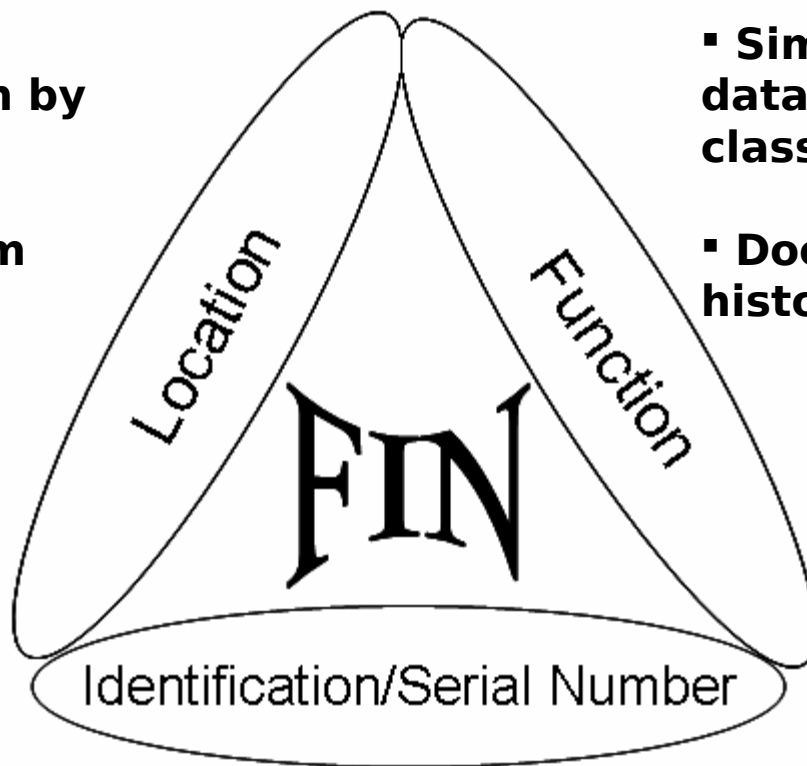
(Location)(Function)(ID)

Functional Index Number (FIN):

A alpha/numeric value assigned to all items in the model.

- **Uniquely identifies every shipboard item by function**
- **Identifies same item across ship classes**

- **Simplifies retrieving data across ship classes**
- **Documents material history**



Location:

Compartment Number, Compartment Name, or XYZ Coordinates

Function:

Defines the operational contribution, action, purpose or activity of an object.

Identification/Serial Number:

Applies an Item Unique Identifier to an object.

Can be composed of an IUID or Material

Identification Number

Operational Readiness, Effectiveness, Primacy



IID DDG 51 Pilot Project Overview

- **MFOM 2.0 will implement a pilot project integrating IID technology**
 - Will use the MRAS shipboard database
 - Effort focused on DDG-51 class
 - Pilot Ship USS FORREST SHERMAN (DDG-98)
- **Targets items that will have maintenance performed on them during the course of a one year period through the tag out system.**
- **There are two major components involved in the proposal;**
 - **Determining the plan for uniquely identifying shipboard equipment and assets**
 - **Application of IID technology to mark legacy equipment and assets and register IID numbers in the DoD registry**
- **Marking would take place primarily at the organizational level during maintenance.**
- **MRAS and MFOM will be modified to track equipment with an associated IID.**



Project Schedule

- **By 31 January 2007:**
 - Determine procurement requirements for IUID marking technology
- **By 1 February 2007:**
 - Develop training curriculum and material for training Ship's Force
- **By 1 April 2007:**
 - Conduct Pre-Pilot testing at the NSWCCD-SSES to verify database communications
- **By 1 May 2007:**
 - Begin application of IUIDs on shipboard equipment
 - Conduct training for ship's force personnel
- **By 1 September 2007:**
 - Complete DDG 51 Class Pilot program IUID application
- **By 30 September 2007:**
 - Complete post DDG 51 Class Pilot program analysis and reporting



Project Schedule

- ✓ **Identify Construct # 1: Enterprise Identifier / Serial Number Requirements**

FFC UIC (DoDAAC) / Special Handling Indicator/Unique Random Serial Number

- ✓ **Develop and implement IUID Data processes and policy for DDG 51 legacy items:**
 - ✓ **Develop non-shipboard initial IUID SOP**
 - ✓ **Determine UID tag type and application/attachment process**
 - ✓ **Determine standard IUID reader requirements**
 - ✓ **Develop initial IUID SOP shipboard**
 - ✓ **Initial Pre-Pilot project plan for testing of DDG 51 Class IUID Project at NSWCCD-SSES Philadelphia**
- ✓ **Identify approximate DDG 51 Class shipboard item inventory for Pilot IUID/MID labeling:**
 - ✓ **Project ship identified as USS FORREST SHERMAN DDG 98**
 - ✓ **ESOMS inventory identified**
 - **Commence shipboard pilot. ESD 23 April 2007**





Backup

Software Screenshots



SHIP MODEL UPDATE NEWS

SECURITY
LEVEL
UNCLASSIFIED

HELP DESK

WELCOME

LOGIN

User ID:

Password:

Login

Reset

NEW USER ACCOUNT

Request

mFOM

Maintenance Figure of Merit (MFOM) is an index value that measures the material condition component of ship's readiness. mFOM 2.0 utilizes Ship's Material Condition Maintenance (SMCM) models for all Surface Navy equipment and ships.

These models, along with a mathematical algorithm, will provide a numerical value indicating the ship's ability to perform its mission, based on its material condition. By tracking a ship's material condition, mFOM will allow maintenance managers to meet the surge deployment goals of the Fleet Response Plan (FRP) and will assist in allocating resources based on a ship's expected operational deployment; the "right" maintenance at the "right" time.



FEEDBACK

Please provide feedback on technical issues and website content to:

Mr. David Greffe, NSWC, Corona, <david.greffe@navy.mil>



MFOM

version 2.1.3
 RIGHT MAINTENANCE. RIGHT TIME. RIGHT COST.

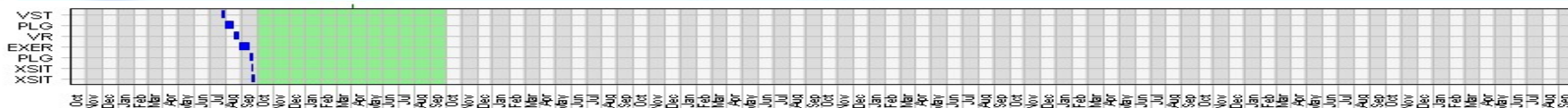
SHIP MODEL UPDATE NEWS

SECURITY LEVEL
 UNCLASSIFIED

MY PROFILE : HELP DESK : FAQs : UTILITIES : SEARCH : LOGOUT : ADMINISTRATOR SCREEN

Maintenance Team Tools

Current Status mFOM-e | Availability | Screen Work | Availability Impact | Financial



Hull:

Scenario:

Data Processed: 200/246

Employment: 07/08/2009

Model Date: 10/18/2005

Data Update: 10/20/2005

USS MCCAMPBELL (DDG 85)

Index By Warfare Area:

Warfare Area Description	ASU	INT	MOB	AAW	AMW	ASW	STW	BMD	C2W	CCC	FSO	NCO	MIW	HULL's	
Threshold	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.70	0.70	0.70	0.60	0.33	0.73	threshold
Index	0.50	0.51	0.33	0.50	0.35	0.38	0.44	0.52	0.50	0.51	0.45	0.48	0.34	0.45	mFOM

Recommended

Help

Service Details:

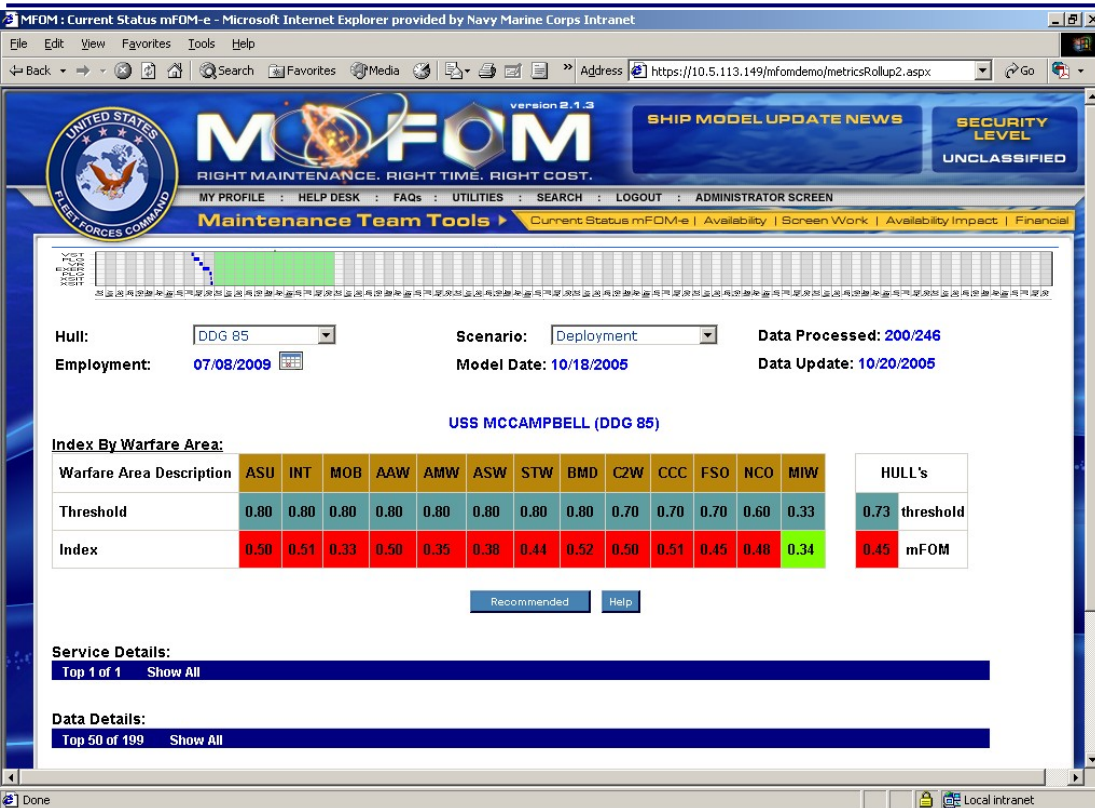
Top 1 of 1 Show All

Data Details:

Top 50 of 199 Show All



Ship's Material Condition Readiness



Scenario based material condition readiness

Work candidates impacting this mission

WAR	LINKED/ LIKE WORK	EFFECT	W.C.-JN	EOC	NARRATIVE	AVAIL	REPAIR ACTIVITY	REC	mFOM-e	Incl	Excl
SU	166	0.61	EM020441	0.3		A123		N	0		
SU	163	0.66	EM020439	0.0	REMOVE AND REPLACE C SUMP	A123		N	11.04		
SU	167	0.78	PE040012	0.6	PROVIDE WAREHOUSE	A123		N	41.10		
SU	164	1.0	CF020267	0.0	TAO VDDS MONITOR FAILURE			N	52.58		
SU	165	0.67	CM020226	0.0	BAD MO DRIVE			N	61.19		
SU	130	0.89	EM020393	0.8	CORRODED DRIP PAN			N	75.90		
SU	62	0.92	EM020426	0.8	HOPM FLOW METERS OUT OF CAL			N	79.24		
SU	20	0.80	CO030076	0.0	NIGHT VISION HAS BROKEN KNOB			N	81.13		
SU	119	0.91	OT020072	0.8	MOVE DCC CUT-OUT SWITCH			N	82.25		
SU	42	0.87	CM020187	0.0	BAD POWER SUPPLY IN MCP			N	84.47		
SU	42	0.87	CM020207	0.6	FUSES			N	84.47		
SU	43	0.87	CM020195	0.0	DAMAGED DELUGE HOSE			N	84.47		
SU	43	0.87	CM020196	0.0	DAMAGED DELUGE HOSE			N	84.47		
SU	43	0.87	CM020197	0.0	DAMAGED DELUGE HOSE			N	84.47		
SU	44	0.87	CM020188	0.0	BAD POWER SUPPLY IN MCP			N	84.47		
SU	71	0.87	CM020234	0.0	TRANSFORMERS			N	84.47		
SU	135	0.87	CM020222	0.0	DAMAGED W29 CABLE ASSEMBLY			N	84.47		
SU	135	0.87	CM020192	0.6	DAMAGED DELUGE HOSE			N	84.47		
SU	141	0.87	CM020228	0.0	DAMAGED T3 AND T4 ON A3			N	84.47		
SU	144	0.87	CM020233	0.0	TRANSFORMERS			N	84.47		
SU	139	0.97	CM020224	0.8	IMA PERFORM 7211 R-26			N	84.47		
SU	140	0.97	CM020227	0.8	IMA PERFORM 7211 R-26			N	84.47		
SU	121	0.93	EM010350	0.6	PUMP CALIBRATION REQUIRED	B123		N	85.54		
SU	124	0.93	EM010352	0.8	POST DEPLOYMENT INSPECTION	B123		N	85.54		
SU	123	0.94	EM010351	0.6	CALIBRATION REQUIRED FOR SAGES	B123		N	86.51		
SU	126	0.96	EM040181	0.0	STRIPPED VALVE STEM	B123		N	89.47		
SU	1	0.94	CI020324	0.0		B123		N	89.66		
SU	1	0.94	CI020325	0.0	NO COMMS ON SWCS RADIO	B123		N	89.66		
SU	1	0.94	CSE10006	0.0	NO COMMS ON SWCS RADIO	B123		N	89.66		
SU	1	0.94	CI020322	0.0	NO COMMS ON SWCS RADIO	B123		N	89.66		
SU	1	0.94	CSE10007	0.0	LOSS OF COMMS ON SWCS RADIO	B123		N	89.66		
SU	1	0.94	CSE10008	0.0	NO COMMS ON SWCS RADIO	B123		N	89.66		
SU	1	0.94	CI020323	0.0	NO COMMS ON SWCS RADIOS	B123		N	89.66		
SU	1	0.94	CSE10009	0.0	NO COMMS ON SWCS RADIO	B123		N	89.66		
SU	1	0.94	CSE10010	0.0	NO COMMS ON SWCS RADIO	B123		N	89.66		
SU	90	0.90	EM010349	0.0	FAULTY DISCRET OUTPUT CARD			N	90.53		
SU	138	0.95	CSE10030	0.0	FAULTY SYNTHESIZER ON RCVR 2			N	90.80		
SU	6	0.99	OIO1R012	0.0	MISSING RED LIGHT AND PLACARD			N	91.47		
SU	125	0.97	EM010354	0.8	CORROSION CONTROL REQUIRED			N	91.99		
SU	45	0.97	EM020394	0.8	CORROSION CONTROL DOOR 2-262-2			N	92.04		
SU	132	0.93	CF020268	0.0	XSTAB 10 POWER FAILURE			N	92.24		
SU	74	0.96	CSE10004	0.0	BIT TEST FAILURE ON USC-55			N	92.34		



Stop Light Matrix

DDG 85

Add Column

Help

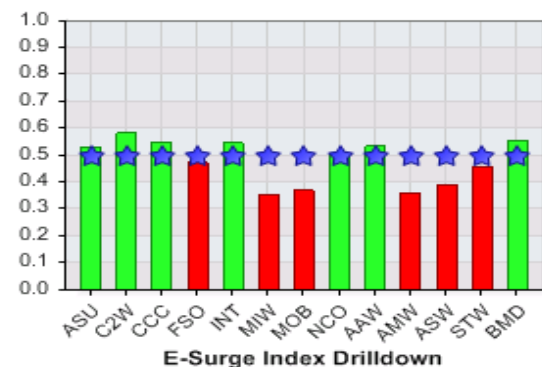
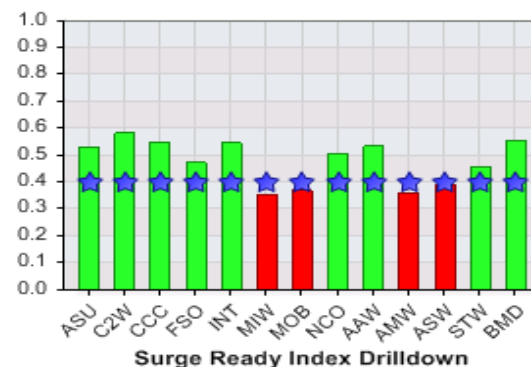
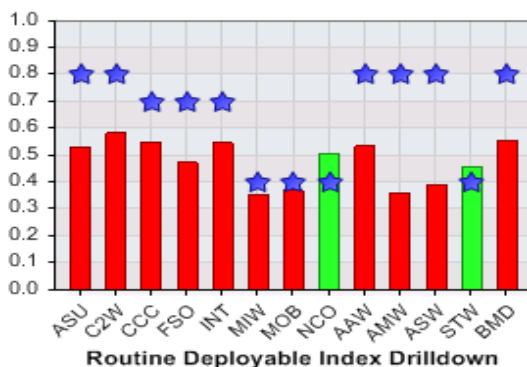
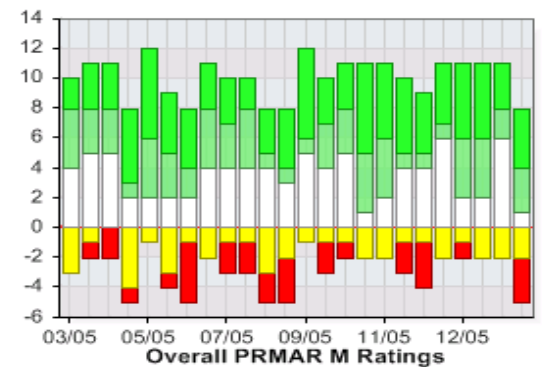
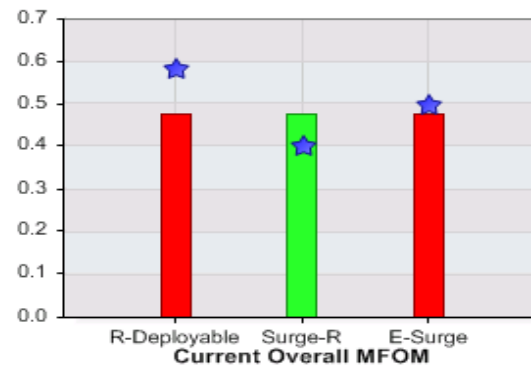
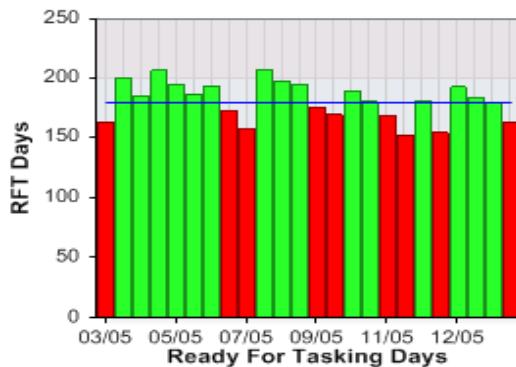
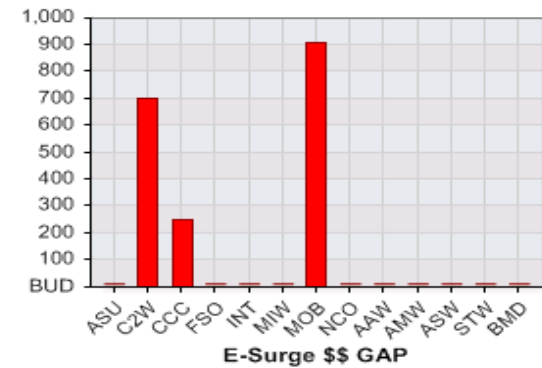
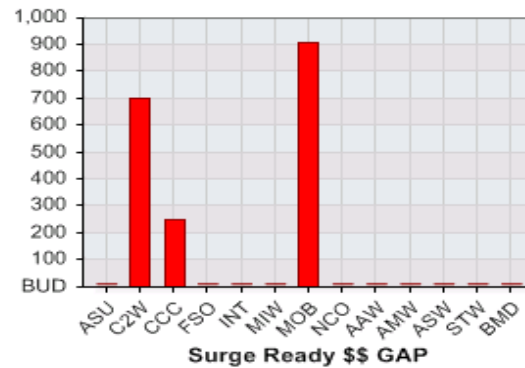
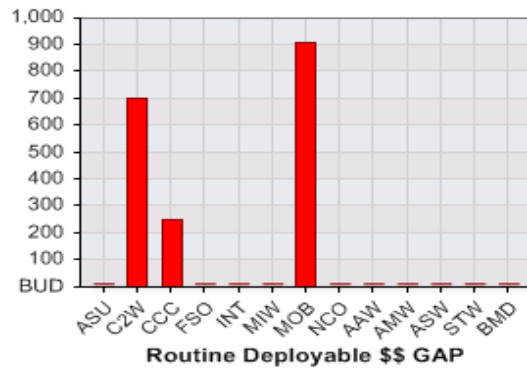
	Remove DDG 85	Remove DDG 85	Remove DDG 85	Remove DDG 85
Select scenario	Deployment	Drug Ops	Ammo On/Off Load	Training
Select Availability	current	current	current	current
mFOM value	0.53	0.53	0.53	0.53
AAW	0.55	0.55	0.55	0.55
AMW	0.46	0.46	0.46	0.46
ASU	0.55	0.55	0.55	0.55
ASW	0.47	0.47	0.47	0.47
BMD	0.57	0.57	0.57	0.57
C2W	0.61	0.61	0.61	0.61
CCC	0.57	0.57	0.57	0.57
FSO	0.54	0.54	0.54	0.54
INT	0.57	0.57	0.57	0.57
MIW	0.45	0.45	0.45	0.45
MOB	0.46	0.46	0.46	0.46
NCO	0.55	0.55	0.55	0.55
STW	0.51	0.51	0.51	0.51

Same ship
portrays
different
readiness for
different
missions

Different ships
can be
displayed at the
same time

Readiness
requirements
are set by
TYCOMs

Readiness
be





Static Index Matrix

Scenario:

	MFOM	ASU	C2W	CCC	FSO	INT	LOG	MIW	MOB	NCO
MCM 1	0.93	0.92	1.00	0.97	0.99	0.99	0.97	0.64	0.89	1.00
MCM 10	0.71	0.73	0.84	0.71	0.77	0.95	0.98	0.10	0.27	1.00
MCM 11	0.83	0.92	0.91	0.82	0.94	0.91	1.00	0.23	0.74	1.00
MCM 12	0.93	0.99	1.00	1.00	0.98	1.00	1.00	0.45	0.92	1.00
MCM 13	0.92	0.98	0.99	0.89	1.00	1.00	1.00	0.65	0.73	1.00
MCM 14	0.86	0.90	0.92	0.89	0.89	1.00	0.97	0.50	0.73	0.99
MCM 2	0.86	0.93	0.94	0.94	0.92	0.97	0.93	0.40	0.72	1.00
MCM 3	0.72	0.89	0.94	0.96	0.76	0.99	0.95	0.00	0.00	0.99
MCM 4	0.88	0.95	0.96	0.99	1.00	0.99	1.00	0.44	0.62	1.00
MCM 5	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MCM 6	0.62	0.84	0.63	0.44	0.81	0.94	0.89	0.00	0.00	0.98
MCM 7	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MCM 8	0.82	0.90	0.96	0.85	0.97	0.99	0.98	0.17	0.50	1.00
MCM 9	0.72	0.88	0.93	0.88	0.91	0.98	0.90	0.00	0.00	0.98



Model Structure

View Ship Model - Microsoft Internet Explorer

File Edit View Favorites Tools Help

Address: https://172.16.0.104/mform2/ViewShipModel.aspx

m • FOM

Home

My Profile

Logout

PE Tools

Current Status mFOM-e

Availability

Screen Work

Availability Impact mFOM-e

Financial

RMC Tools

Stop Light Matrix

Availability Impact mFOM-p

Financial

FMO Tools

FMO Dashboard

FMO Parameters

Utilities

FIN Look Up

View Ship Model

Input 3M

Admin

Manage Users

Select Hull: MCM 9 Warfare Area: MOB Model Date: 14-AUG-04

	Impact	Index
C4I	0.52	0.86
CTRL	0.00	0.80
PROP	0.00	0.41
HAB	0.98	0.93
AUX	0.63	0.49
SDEF	0.98	0.93
PWR	0.00	0.53
DC	0.98	0.98
DC EQUIP	0.75	0.82
DC LOCKER	0.83	0.00
CLOSURES	0.83	1.00
DECON STATIONS	0.83	1.00
EEBD	0.83	1.00
LIST/TRIM INDIC	0.83	1.00
MAIN AND SECONDARY DRAIN	0.83	0.90
ABC	0.75	1.00
FF EQUIP	0.75	0.90
AFFF	0.80	1.00
APC	0.80	1.00
FIREMAIN	0.80	0.51
ZONE	0.75	1.00
ZONE 1	0.75	0.60
ZONE 2	0.75	0.00
ZONE 6	0.75	1.00
HALON	0.80	1.00
SPRINKLING	0.80	1.00
STRUCTURE	0.75	0.75
CSS	1.00	1.00

Colors and indenture show model levels

Column shows impact of individual equipment on this warfare area

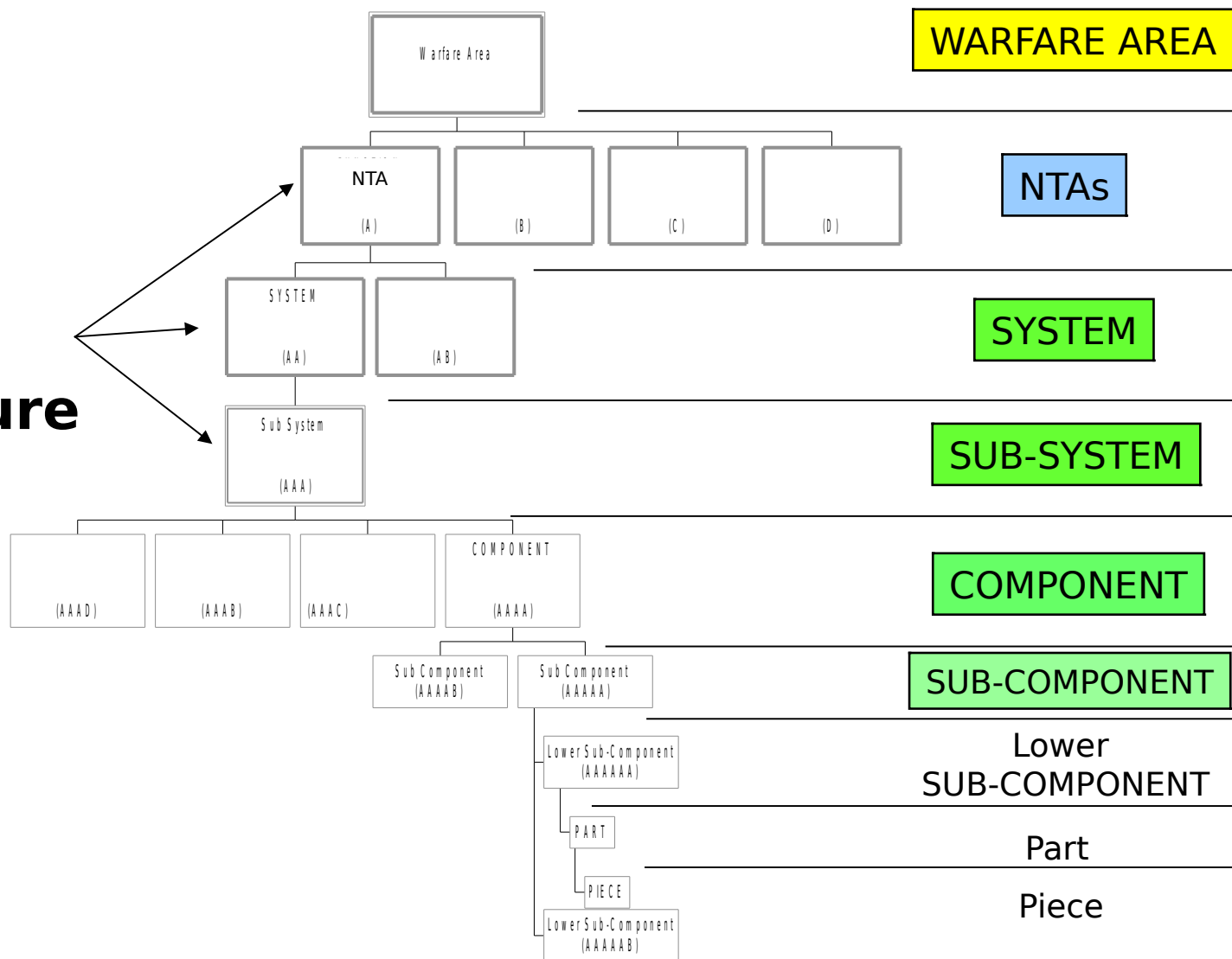
Column shows equipment degradation if



Analytical Hierarchical

Ship Material Condition Model Conventions

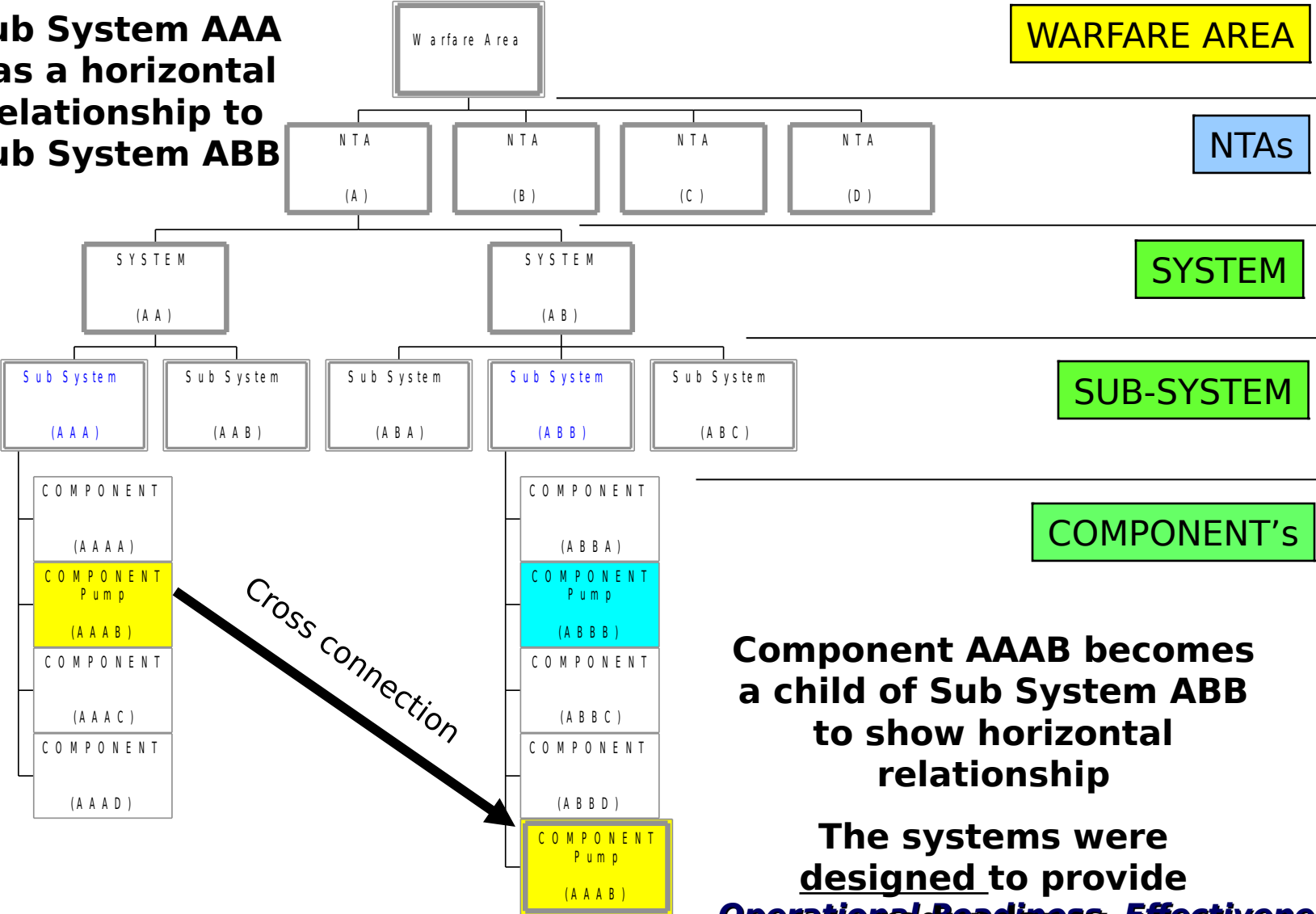
**Level
of
Indenture**





MFOM Horizontal Structure

Sub System AAA has a horizontal relationship to Sub System ABB



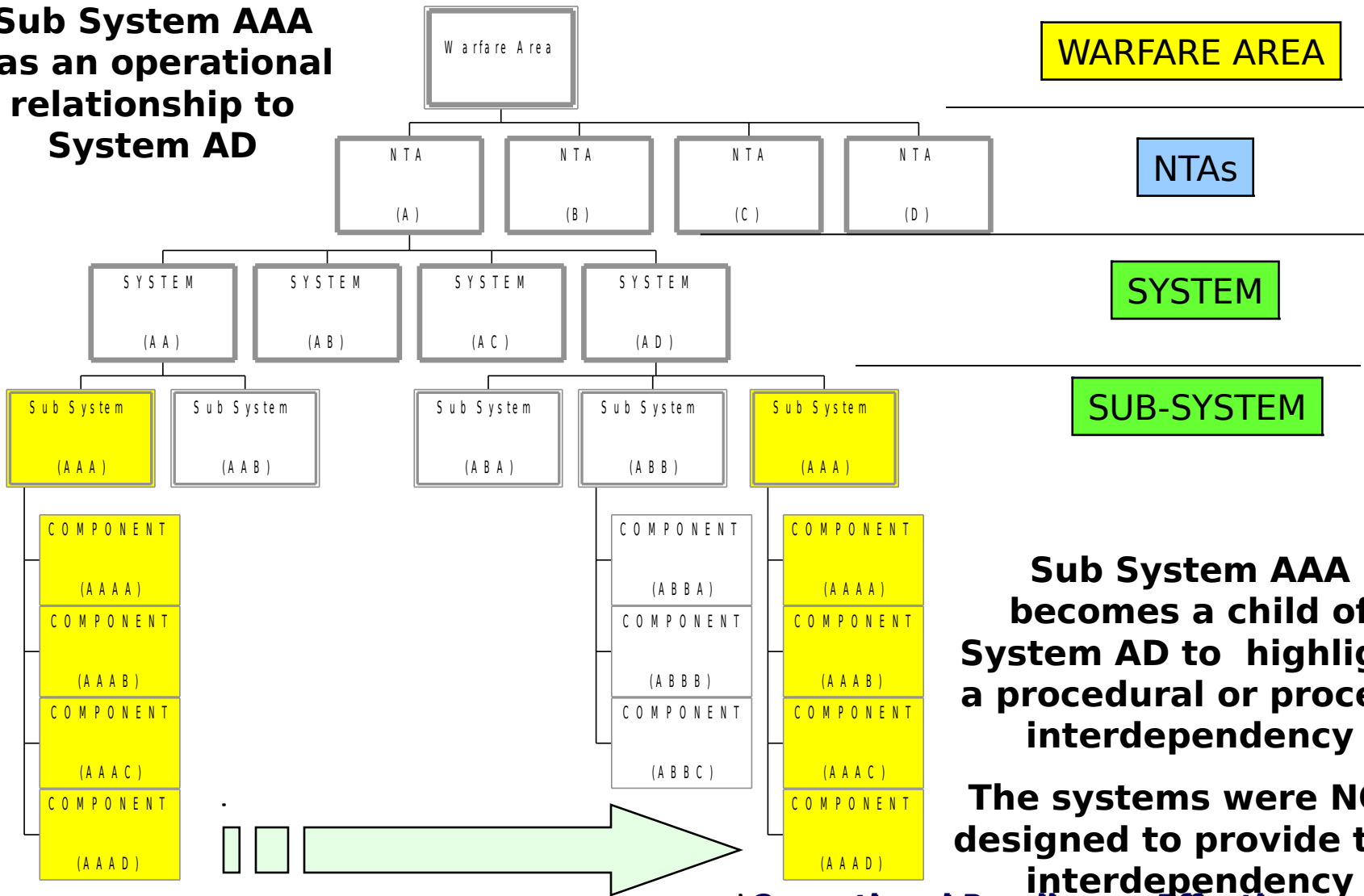
Component AAAB becomes a child of Sub System ABB to show horizontal relationship

The systems were designed to provide **Operational Readiness, Effectiveness, redundancy, Primacy**



MFOM Operational Structure

Sub System AAA has an operational relationship to System AD



Sub System AAA becomes a child of System AD to highlight a procedural or process interdependency

The systems were NOT designed to provide this interdependency



Mapping the Structure

